



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/324,149 | 06/02/1999 | SHIMON WEISS | IB-1402 | 1126 |

8076 7590 03/18/2002

LAWRENCE BERKELEY NATIONAL LABORATORY
ONE CYCLOTRON ROAD, MAIL STOP 90B
UNIVERSITY OF CALIFORNIA
BERKELEY, CA 94720

EXAMINER

QUARTERMAN, KEVIN J

ART UNIT PAPER NUMBER

2879

DATE MAILED: 03/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

62

Office Action Summary

Applicati n No.

09/324,149

Applicant(s)

WEISS ET AL.

Examin r

Kevin Quarterman

Art Unit

2879

-- The MAILING DATE of this c mmunication appears on the cover sheet with th correspondenc address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Amended claim 1 now cites an array of "undoped" semiconductor nanocrystals. The specification does not provide proper antecedent basis for the claimed subject matter.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Bhargava (USPN 5455489).

4. Regarding independent claim 1, Bhargava discloses a display device with a phosphor screen comprising nanocrystals (col. 1, ln. 61-63). Bhargava also describes the preparation of undoped nanocrystals (col. 4, ln. 60-61). Bhargava also discloses a pixel addressing system comprising row addressing voltages and column addressing voltages (Column 8, Lines 30-54).

5. Regarding claim 14, Bhargava discloses that the nanocrystals emit light of red, green, and blue colors (col. 4, ln. 19).

Art Unit: 2879

6. Regarding claim 15, Bhargava discloses that the nanocrystals also emit light of colors other than the primary colors (col. 10, ln. 17-22).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-13 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhargava in view of Yagyu (USPN 5856814).
9. Regarding claims 2-6, 10-13, and 20, Bhargava discloses the claimed invention except for the pixel addressing system having a backlight source.
10. Regarding claim 2, Yagyu, in the art of display devices, discloses a pixel addressing system that includes a backlight source (col. 6, ln. 50).
11. Regarding claims 3, 6, 10, 13, and 20, Yagyu discloses the backlight source being blue light (col. 6, ln. 53).
12. Regarding claim 4, Yagyu discloses a multi-element backlight source, wherein each source element is independently operable (col. 6, ln. 55-60).
13. Regarding claim 5, Yagyu discloses that the source elements may be LEDs (col. 6, ln. 57).
14. Regarding claims 11 and 12, Yagyu discloses that the backlight source may be a laser light source (col. 6, ln. 56).

15. Therefore, it would have been obvious to a person having ordinary skill in the art to provide the light sources of Yagyu in the display device of Bhargava for producing a luminescent color pattern of pixels.

16. Regarding claims 21-23, the Examiner notes the functional recitation that the pixel addressing system produces light of substantially a single wavelength has not been given patentable weight because it is narrative in form. Since there are no structural differences from the prior art, the light source of Yagyu meets the claim because it is capable of producing light of a single wavelength.

17. Regarding claims 7-9, Bhargava discloses the claimed invention except for the display apparatus having a liquid crystal modulator, an analyzer, and polarizer.

18. Regarding claim 7, Yagyu teaches that it is known in the art to provide a liquid crystal modulator in display devices (col. 7, ln. 7-15).

19. Regarding claim 8, Yagyu teaches that it is known in the art to provide an analyzer in display devices (col. 13, ln. 44-45).

20. Regarding claim 9, Yagyu teaches that it is known in the art to provide a polarizer in display devices (col. 13, ln. 44-45).

21. Therefore, it would have been obvious to a person having ordinary skill in the art to provide the modulator, analyzer, and polarizer of Yagyu in the device of Bhargava for modulating, analyzing, and polarizing the light signals of the light source.

22. Claims 2-3 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhargava in view of Jaskie (USPN 5442254).

Art Unit: 2879

23. Bhargava discloses all of the limitations of claim 1 as stated above but fails to exemplify a backlight source and the nanocrystals being formed on a transparent plate.

24. Jaskie, in the analogous art of fluorescent devices, shows nanocrystals on a transparent plate in Figure 2. Jaskie also discloses ultraviolet light as a backlight source for stimulating the nanocrystals (Column 1, Lines 23-28).

25. Therefore, it would have been obvious to a person having ordinary skill in the art to form the nanocrystals on a transparent plate and use ultraviolet light as taught by Jaskie in the device of Bhargava for addressing the pixels associated with the nanocrystals.

26. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhargava (USPN 5455489) in view of Bhargava (USPN 5422489).

27. Bhargava (5455489) discloses all of the limitations of claim 1 as stated above but fails to exemplify a filter placed over the nanocrystal array.

28. Bhargava (USPN 5422489), in the analogous art of light emitting devices, discloses a glowing device having a nanocrystal layer with a filter for transforming radiation into the desired spectrum region (Column 1, Last Paragraph).

29. Therefore, it would have been obvious to a person having ordinary skill in the art to place a filter over the nanocrystal array as taught by Bhargava (USPN 5422489) in the device of Bhargava (USPN 5455489) for filtering light to thereby produce a desired display.

Response to Arguments

30. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

31. In response to applicant's argument that Bhargava fails to exemplify undoped nanocrystals, the Examiner notes Bhargava discloses that undoped nanocrystals may be used in the invention (col. 4, ln. 60-63).

Conclusion

32. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

33. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (703) 308-6546. The examiner can normally be reached on M-F (8-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Kevin Quarterman
Examiner
Art Unit 2879

kq 
March 13, 2002


Vip Patel
Primary Examiner
Art Unit 2879